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The description of heavy oils and the products of their catalytic conversion according to sara-analysis data

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Abstract

© Research India Publications. The main obstacle during the production of heavy oils is their abnormally high viscosity due to a significant content of resin-asphaltene substances. In order to remove heavy oils a variety of methods is used that reduces the viscosity in a layer and provides the partial conversion of the heavy components as the result of aquathermolysis. The disadvantages of this method are the high cost and the formation of free radicals to break ties. Free radicals may be involved in the polymerization reaction and form larger molecules, which leads to the viscosity increase. In order to inhibit the formation of free radicals, to reduce oil viscosity and the temperature of thermal processes various catalysts are used. They are administered in a nano state or as precursors. At the decomposition of the last ones directly into a layer an active form of a catalyst is developed. The search for new efficient catalysts obtained using available raw materials, is an urgent task to improve the energy efficiency of thermal methods for heavy oil recovery. However, for the successful solution of such problems the knowledge of the process law is required taking place under the influence of heavy oils, which is possible only in a qualitative study of the individual components. A qualitative study of heavy oil chemical composition makes it necessary to separate them into components. A common way of such oil separation is SARA method. The paper studied the influence of the iron-containing catalyst precursor to convert the heavy oil of Ashalchinsky oil field in the catalytic aquathermolysis.

Keywords

Aquathermolysis, Catalyst precursor, Heavy oil, Method, SARA